

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/768,403

Confirmation No.: 3788

Filed: January 30, 2004

Inventor(s):

Murphy et al.

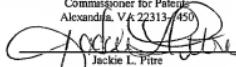
Title: SYSTEM AND METHOD
FOR FACILITATING
CARDIAC
INTERVENTION

§ Examiner: Bitar, Nancy
§ Art Unit: 2624
§ Atty. Dkt. No: 5838-03103

CERTIFICATE OF MAILING
UNDER 37 C.F.R. §1.8

DATE OF DEPOSIT: Dec 30, 2007

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COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

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Sir:

Claims 250, 252-261 and 263 have been allowed as indicated in the Notice of Allowance mailed September 21, 2007. The Notice of Allowance makes several assertions, some of which Applicant wishes to respond to herein.

A. **Response to Reasons for Allowance**

The Notice of Allowance states:

The most pertinent prior art is Kiyuna et al (US 7,136540) and Sheehan et al (US 5,435,310). Kiyuna discloses a technology for extracting a target object region from picture data that include a region extraction target image, based on attributes of pixels of a picture; particularly, the invention relates to a picture

region extraction method and device that extract a region such as a specific organ, tumor, cell nucleus, and glandular cavity in a picture from picture data taken with an MRI apparatus or a CT scanner, or a cross-sectional view of a biological tissue observed with a biological microscope. Sheehan teaches the use of three-dimensional model of the heart to determine cardiac parameters by imaging and three-dimensional modeling portions of the heart, particularly, the left ventricular endocardial and epicardial surfaces, using imaging data. Preferably, a transesophageal ultrasound probe is inserted into an esophagus of a patient to provide multiple plane imaging data at end systole and end diastole during a cardiac cycle. The image planes are then traced along the boundaries of the epicardial and endocardial surfaces to produce sets of data points, which are further processed and expanded through interpolation. These data points are used for modeling the endocardial and epicardial surface at the end systole and end diastole extremes of the cardiac cycle. A center surface is constructed between an inner and outer surface of the modeled surfaces of the left ventricle and an average template of tiled sections is mapped onto this center surface. The mapped tiled sections are then projected onto the inner and outer surfaces, defining triangular prisms. By determining the volume of the triangular prisms and an average area for their ends, the range of movement, which is equal to the volume divided by the average area, is determined. Similarly, for changes in wall thickness between the endocardial and epicardial surfaces at end diastole and end systole, the thickening of the cardiac wall is determined. Neither Kiyuna nor Sheehan discloses "automatically segmenting at least a portion of left ventricle wall epicardial boundaries of at least two of the provided images of heart tissue into a selected number of epicardial left ventricle wall points; and automatically using endocardial left ventricle wall points and epicardial left ventricle wall points to create a model of at least a portion of the left ventricle wall over one or more periods of time" thus helping identifying and evaluating the positioning of the valve apparatus, the attached tissue and their combined performance and allowing the physician to stimulate the treatment on a portion of those elements and see the effect the treatment has on the other elements and the heart as a whole prior to performing the surgery. The Examiner finds no reason or motivation to combine the above references in an obviousness rejection thus placing the application in condition for allowance.

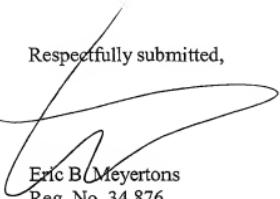
Applicant respectfully disagrees with the Examiner's Statement of Reasons for Allowance and/or Applicant believes that the Examiner's Statement of Reasons for Allowance is incomplete.

Applicant respectfully submits that the cited art does not teach or suggest the combinations of features set forth in the Applicant's claims. By way of nonlimiting example, Applicant submits the submitted references at least do not appear to teach or suggest, as stated in claim 250, "creating endocardial and epicardial left ventricle wall boundaries; automatically segmenting at least a portion of left ventricle wall endocardial boundaries of at least two of the provided images of heart tissue into a selected number of endocardial left ventricle wall points" or "assigning a value to at least one of the sections of the model, wherein the value is a function of a feature of the section; and using the value of at least one of the sections to assess viability of human heart tissue in or proximate to at least one of the sections with an assigned value," in combination with the other features of the claims.

First Named Inventor: Gregory Murphy
Appl. Ser. No.: 10/768,403
Atty. Dkt.: 5838-03103

Applicant believes that no fees are due in association with the filing of this document. If any fees are required, please charge those fees to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account Number 50-1505/5838-03103/EBM.

Respectfully submitted,



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